TRS-80™ MODEL I

CASSETTE COMM USER'S GUIDE

Catalog Number 26-1139

Terminal Software
for Model I Level II without RS-232-C

Radio Shack TRS-80 SOFTWARE™

CUSTOM MANUFACTURED IN THE USA FOR RADIO SHACK A DIVISION OF TANDY CORP.

Cassette Comm User's Guide
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Introduction

Cassette Comm is solely for use with Model I Level II Computers and the Modem I. If your Computer has an RS-232-C interface installed, don't use Cassette Comm; use Radio Shack's Videotex software instead.

Cassette Comm is a terminal program that allows you to communicate with an information service. When you run Cassette Comm, information you type will be sent to the "host" computer (the computer providing the information service). Information from the host computer will be displayed on your screen.

Most terminal programs require an RS-232-C interface for input/output. But Cassette Comm uses the Level II cassette tape interface. The Modem I has a "CASS" mode specifically for this application.

To use Cassette Comm, you need:

- Model I Level II TRS-80 with at least 16K RAM
- Cassette Recorder
- Modem I Telephone Interface (Radio Shack Cat. No. 26-1172)
- Cassette Comm Cable (26-3009)

You may use Cassette Comm with a cassette or disk system. However, if you have an RS-232-C interface, don't use Cassette Comm; use Radio Shack's Videotex or other communications software instead.

Starting Up

Set up your Computer as usual (including the cassette recorder) and turn it on. Instructions for non-disk and disk systems are given separately.

Loading the Tape (Non-Disk Systems Only)

1. Prepare the recorder to play the Cassette Comm tape.
2. Put your Computer in the READY mode. Type `SYSTEM` (ENTER). Then type `C` (ENTER). The Computer should begin loading the tape.
3. After a successful load, `*?` will reappear. Type `/` (ENTER). The Cassette Comm heading should appear, followed by a solid block on the next line. This is the cursor, indicating the current display position. Cassette Comm is now running. Proceed to the section titled, **Connecting the Modem I**.

If you have problems loading the tape, try a different volume setting.

Loading the Tape (Disk Systems Only)

Since you have a disk system, it will be convenient to copy Cassette Comm onto a disk file. After doing this, you'll be able to start Cassette Comm without using a recorder. To copy Cassette Comm onto a disk file, you will need the TAPEDISK utility included on your TRSDOS factory release diskette.

Note: If you don't have TAPEDISK or don't want a disk copy of Cassette Comm, you may follow the instructions given previously for non-disk systems. But before issuing the SYSTEM command (Step 2), you must type `CMD "T"` (ENTER) to allow cassette input/output.

1. Prepare the recorder to play the Cassette Comm tape.
2. Put your Computer in the TRSDOS READY mode. Type `TAPEDISK` (ENTER), then type `C` (ENTER). The Computer will begin loading the tape.

   If you have problems loading the tape, try a different volume setting.
3. After a successful load, the `?` will reappear. Type

   ```
   F CASSCOMM/CMD:0 7000 73A0 7001 (ENTER)
   ```

   This will create a Cassette Comm program file on the diskette in Drive 0.
4. Type `E` (ENTER) to exit from TAPEDISK.
5. To run Cassette Comm, put the Computer in the TRSDOS READY mode and type `CASSCOMM` (ENTER). The Cassette Comm heading should appear, followed by a solid block on the next line. This is the cursor, indicating the current display position. Cassette Comm is now running.

Connecting the Modem I

1. Connect the Modem I to the phone lines and to the AC power source as shown in the *Modem I Owner's Manual*.
2. Disconnect the cassette recorder from the TRS-80 TAPE jack.
3. Connect the Modem I to the TRS-80. The four-pin plug goes to the Modem I's RS-232/CASS jack. The five-pin plug goes to the TRS-80 TAPE jack.
4. On the Modem I, set NORM/CASS to CASS and MODE to OFF.

Using Cassette Comm

While running Cassette Comm, whatever you type will be sent via the Modem I to the host computer. Whatever the host computer sends to you will be displayed on your screen (except for a few special "control codes" listed later on).

Note: Cassette Comm does not display the keys you type. It is up to the host program to echo back what you type so that it may be displayed on your screen. This is the normal arrangement with host systems.

The unshifted keys (A) - (Z) output uppercase letters. For lowercase letters, use (SHIFT) (A) - (SHIFT) (Z).

Certain keys you type have special functions:

Key	Hex Code	Character Sent
(ENTER)	0D	Carriage return
(BREAK)	03	Control-C
(SHIFT) (←)	5B	Left bracket
(SHIFT) (→)	5D	Right bracket
(SHIFT) (↓) plus any key from (A) to (Z)	01 to 1A	Control A to Control Z

Note: In disk systems only, Control-R ((SHIFT) (↑) (R)) causes the Computer to exit from Cassette Comm and return to TRSDOS READY. In a non-disk system, this key combination will cause the Computer to stop (you'll have to press reset to regain control).

Most characters received will simply be echoed on the screen. Lowercase will be displayed as lowercase if your Computer has the lowercase modification; uppercase if it doesn't.

Certain characters received have special functions, which allow the host to control your screen format and appearance.

Received Character(s)		Function
Name	Hex Code Sequence	
ESC l	1B 6C	64 character/line (c/l) mode.
ESC m	1B 6D	32 c/l mode.
ESC J	1B 4A	Clear to end of page.
ESC K	1B 4B	Clear to end of line.
ESC Y_ _	1B 59 line + 20, col + 20	Position cursor to line, column*.
ESC j	1B 6A	Clear page.
ESC A	1B 41	Cursor up.
ESC B	1B 42	Cursor down.
ESC C	1B 43	Cursor right.
ESC D	1B 44	Cursor left.
ESC H	1B 48	Home cursor.

*The cursor position sequence goes like this: ESC Y followed by a two-byte sequence indicating the desired column and row. The first byte is the column value plus hex 20; the second byte is the row value plus hex 20. For example, to position to column 8, row 32 (hex 8, hex 20), the following sequence would be used:

1B 59 28 40 (since 28 = 8 + 20; 40 = 20 + 20).

Important Note

Because of the limitations of the cassette interface, Cassette Comm cannot receive and send simultaneously. Characters you type will always take precedence. When there is a conflict, the incoming data will be garbled. Meaningless characters will appear on your screen. When you stop typing, normal character input can resume.

For this reason, you should not type while you are receiving characters. However, if you must interrupt the incoming information by typing, go ahead. Regardless of what appears on your screen, the characters you type are sent properly. For example, you may want to tell the host computer to pause during a lengthy transmission. Send a pause character (Control S or other character). A few characters will be garbled on you screen, but the host computer will receive the pause command anyway.

Sample Use with a Host Computer

Cassette Comm assumes the following communications conventions:

300 baud
1 start bit
8 bit words
No parity
1 stop bit
Terminal is originate mode, host is answer mode

Cassette Comm is compatible with most information services. With a few exceptions (described later on), Cassette Comm acts like a Radio Shack Videotex terminal.

1. Start Cassette Comm.
2. Connect your TRS-80 to the Modem I and phone circuit as explained previously.
3. On the Modem I, select the OFF mode. Set the NORM/CASS switch to CASS.
4. Call the host computer. When the host answers with a high-pitched "carrier" tone, set the Modem I to ORIG. Hang up the phone.
5. The POWER ON and CD lights on the Modem I should both be on.
6. Start the log-on procedure for the host system you are using.

Differences between Cassette Comm and Videotex

1. Cassette Comm cannot receive and send simultaneously. The send function always takes precedence. If you type while characters are being received, the received information will be garbled.
2. Cassette Comm ignores line feeds (hex 0A). Received carriage returns cause a line feed and a carriage return on the display.
3. The text handling on the screen is simpler than that in Videotex. For example, a blank line will be displayed if a character is displayed in the rightmost column of the display. There is no "clean text" mode; words will be broken if they cross an end of line boundary.

   These simplifications are necessary to maintain the timing required by the cassette interface.
4. Cassette Comm will not output to a printer.
5. The capitals/lowercase switch (SHIFT 0) has no effect.

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NOTE: Good data processing procedure dictates that the user test the program, run and test sample sets of data, and run the system in parallel with the system previously in use for a period of time adequate to insure that results of operation of the computer or program are satisfactory.

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